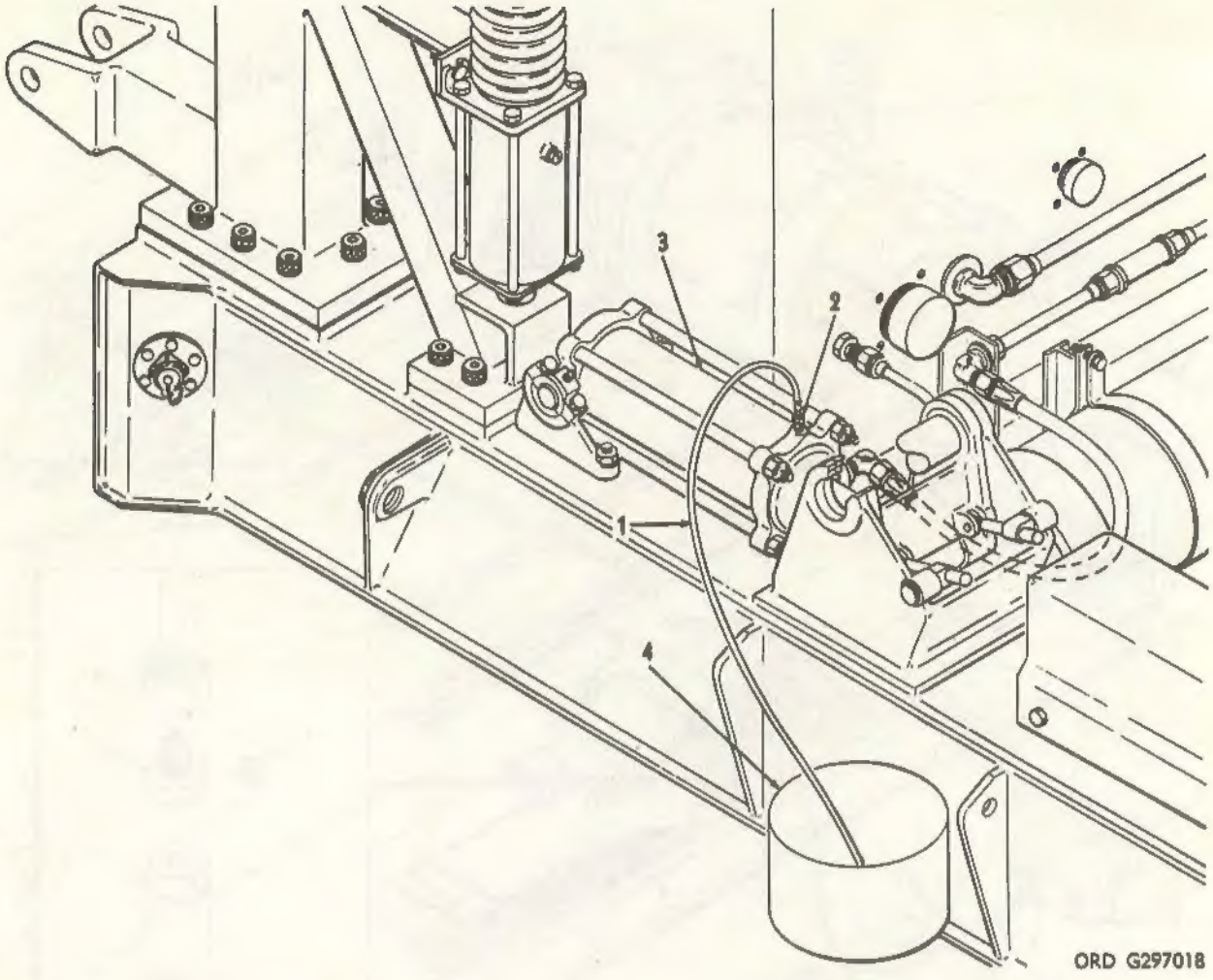


1—Hose assembly
2—Bleeder valve
3—Hydraulic downlock assembly
4—Container

Figure 25. Hydraulic downlock assembly—flush.

24) and install an adapter (2) and hose assembly (4) on the bleeder valves (18 and 20) on the forward end of the left and right actuating cylinder assemblies (15 and 16). Place the free end of each hose assembly in a suitable container.

aw. Loosen the bleeder valves and allow the hydraulic oil to drain.

ax. Open the SYSTEM BYPASS valve (fig. 21).

ay. Set the LAUNCHER switch on the launcher control-indicator to UP and allow a minimum of one gallon of hydraulic oil to drain from each hose assembly; tighten the bleeder valves.

az. Close the SYSTEM BYPASS valve.

ba. When the launcher erecting beam is up and locked set the LAUNCHER switch to STOP.

bb. Torque the bleeder valves (18 and 20, fig. 24) to 75 pound-inches.

bc. Remove the adapters and hose assemblies and install the set screws (17 and 19).

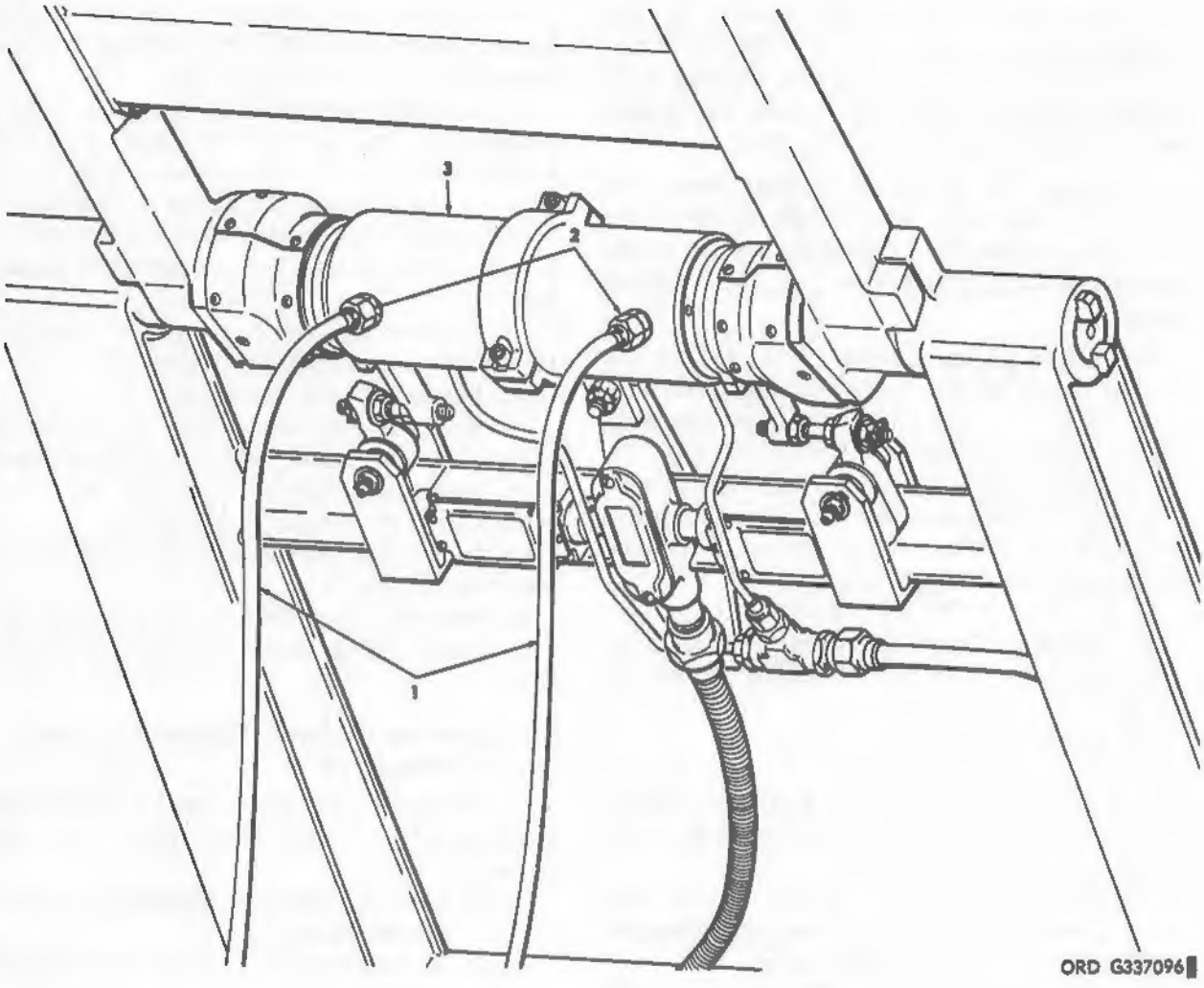
bd. Depressurize the hydraulic oil reservoir.

be. Remove the filler cap (fig. 22).

bf. Fill and pressurize the hydraulic oil reservoir as prescribed in *ag* through *ai* above.

bg. Open the SYSTEM BYPASS valve (fig. 21).

bh. Install a hose assembly (4, fig. 24) on



1—Hose assembly
2—Bleeder valve
3—Hydraulic uplock assembly

Figure 26. Hydraulic uplock assembly—flush.

each bleeder valve (11 and 12) on the rear end of the left and right equilibrator cylinder assemblies (8 and 9). Place the free end of each hose assembly in a suitable container.

bi. Loosen each bleeder valve and allow a minimum of one gallon of hydraulic oil to drain from each hose assembly; torque the bleeder valves to 75 pound-inches.

bj. Remove the hose assemblies.

bk. Repeat *bh* through *bj* above for the bleeder valves (13 and 14) on the rear end of the left and right actuating cylinder assemblies (15 and 16).

bl. Close the SYSTEM BYPASS valve (fig. 21).

Caution: **Adequate support must be placed across the launcher base to prevent damage to the launcher base in the event that the launcher erecting beam suddenly descends while the procedures described in *bm* and *bn* below are being performed.**

bm. Shore the launcher erecting beam with adequate support across the launcher base in a position to engage the launcher struts in the event that the launcher erecting beam suddenly descends.

bn. Set the LAUNCHER switch on the launcher control-indicator to DOWN. When the launcher erecting beam has lowered to a position approximately 60° from horizontal, set the LAUNCHER switch to STOP.

***Warning:* The launcher erecting beam will slowly descend when *bo* through *bp* below are being performed. To prevent injury or death, personnel must stand clear of the erecting beam.**

bo. Install a hose assembly (fig. 25) on the bleeder valve on the hydraulic downlock cylinder; place the free end of the hose assembly in a suitable container.

bp. Slowly loosen the bleeder valve and allow a minimum of one gallon of hydraulic oil to drain.

bq. Torque the bleeder valve to 75 pound-inches and remove the hose assembly.

br. Set the LAUNCHER switch to UP.

bs. When the launcher erecting beam is up and locked, set the LAUNCHER switch to STOP.

bt. Remove the shoring.

bu. Install a hose assembly (fig. 26) to each of the bleeder valves on the hydraulic uplock assembly. Place the free end of each hose assembly in a suitable container.

bv. Slowly loosen the bleeder valves and allow a minimum of one gallon of hydraulic oil to drain from each bleeder valve.

bw. Torque the bleeder valves to 75 pound-inches and remove the hose assemblies.

bx. Depressurize the hydraulic oil reservoir (fig. 22) as prescribed in *d* above.

by. Remove the filler cap.

bz. Fill and pressurize the hydraulic oil reservoir as prescribed in *ag* through *ai* above.

ca. Close the SYSTEM BYPASS valve (fig. 21).

cb. Set the LAUNCHER switch on the launcher control-indicator to DOWN.

cc. When the launcher erecting beam is down and locked, set the LAUNCHER switch to OFF.

cd. Remove the front cover (3, fig. 14).

ce. Remove the bottom cover (6, fig. 14).

cf. On mobile launchers remove the plate (3, fig. 16).

cg. Remove the rear wedgelock assembly access cover (6).

ch. Install a hose assembly (fig. 15) on each bleeder valve. Place the free ends of the hose assemblies in a suitable container.

ci. Manually actuate the forward locking wedge (16, fig. 14) and the rear wedgelock assembly (8, fig. 16) to force out the hydraulic oil from the inside of the wedge assemblies.

cj. Torque the bleeder valves (fig. 15) to 75 pound-inches and remove the hose assemblies.

ck. Depressurize the hydraulic oil reservoir (9, fig. 22) as prescribed in *d* above.

cl. Remove the filler cap (1).

cm. Fill and pressurize the hydraulic oil reservoir as prescribed in *ag* through *ai* above.

cn. Install the front cover (3, fig. 14).

co. Install the bottom cover (6).

cp. Install the rear wedgelock assembly access cover (6, fig. 16).

cq. On mobile launchers, install the plate (3).

cr. Install the launcher rack assemblies (fig. 20).

22. Launcher Hydraulic System Air Bleed Procedures

a. The bleeder procedures will be performed as required and also after performing the operations below.

(1) Launcher leveling (CONUS type configuration only).

(2) Replacement of hydraulic components or lines.

(3) Launcher hydraulic oil change.

b. Perform the air bleed procedures as prescribed below.

(1) Check that the sight gage (8, fig. 22) on the hydraulic oil reservoir indicates FULL. Check that the HYDRAULIC RESERVOIR PRESSURE gage indicates between 18 and 25 psi.

Note. If the HYDRAULIC RESERVOIR PRESSURE gage indicates below 15 psi or the sight gage on the hydraulic oil reservoir indicates below the half-way point during these procedures, the hydraulic oil reservoir must be serviced as described in paragraph 21 *ae* through *ai*.

***Caution:* If the oil level does not indicate on the sight gage at any time during these bleed procedures, the hydraulic oil reservoir must be serviced**

and the entire bleed procedures described in this paragraph must be repeated.

(2) Open the EQUILIBRATION SYSTEM BYPASS VALVE (fig. 21) and the SYSTEM BYPASS valve.

(3) Insure that the AIR RESERVOIR PRESSURE gage indicates between 600 and 2,000 psi.

(4) Remove the launcher rack assemblies (fig. 20).

Caution: **The safety device assemblies must be secured in the vertical position to prevent them from being damaged when the launcher erecting beam is raised and lowered.**

(5) Secure the safety device assemblies.

(6) Remove the bottom cover (6, fig. 14).

(7) Air bleed the forward end of the wedge lines as described in *(a)* through *(c)* below.

(a) Remove the valve cap from the bleeder valve (fig. 15) below the forward wedge assembly and install the hose assembly. Place the free end of the hose assembly in a suitable container.

(b) Slowly loosen the bleeder valve and allow the hydraulic oil to flow until it runs clear without an indication of air or foam. Torque the bleeder valve to 75 pound-inches.

(c) Remove the hose assembly and install the valve cap on the bleeder valve.

(8) Repeat step (7) above for the rear wedge line.

(9) Air bleed the forward end of the left equilibrator cylinder assembly (8, fig. 24) as described in *(a)* through *(c)* below.

(a) Remove the set screw (6) and install the adapter (2) and hose assembly (4) on the bleeder valve (7). Place the free end of the hose assembly in a suitable container.

(b) Slowly loosen the bleeder valve and allow the hydraulic oil to flow until it runs clear without an indication of air or foam. Torque the bleeder valve to 75 pound-inches.

(c) Remove the adapter and hose assembly and install the set screw.

(10) Repeat step (9) above for the forward end of the right equilibrator cylinder assembly (9).

(11) Air bleed the uplock cylinder assembly (fig. 26) as described in *(a)* through *(c)* below.

(a) Remove the valve caps from bleeder valves and install a hose assembly on each valve. Place the free end of each hose assembly in a suitable container.

(b) Slowly loosen both bleeder valves and allow the hydraulic oil to flow until it runs clear without an indication of air or foam. Torque both bleeder valves to 75 pound-inches.

(c) Remove the hose assemblies and install the valve caps on each bleeder valve.

(12) Close the SYSTEM BYPASS valve (fig. 21).

(13) Set the MAIN POWER BRKR switch on the power distribution box to ON.

(14) Set the POWER switch on the section control-indicator to ON.

(15) Set the TEST-FIRE switch on the launcher control-indicator to TEST.

(16) Set the LAUNCHER DC POWER switch on the launcher control-indicator to on.

(17) Set the LAUNCHER switch on the launcher control-indicator to UP. When the launcher erecting beam is up and locked, set the LAUNCHER switch to STOP.

(18) Air bleed the rear end of the left actuating cylinder assembly (15, fig. 24) as described in *(a)* through *(c)* below.

(a) Remove the valve cap from the bleeder valve (13) and install the hose assembly (4). Place the free end of the hose assembly in a suitable container.

(b) Slowly loosen the bleeder valve and allow the hydraulic oil to flow until it runs clear without an indication of air or foam. Torque the bleeder valve to 75 pound-inches.

(*c*) Remove the hose assembly and install the valve cap on the bleeder valve.

(19) Repeat step (18) above for the rear end of the right actuating cylinder assembly (16).

(20) Repeat step (18) above for the rear end of the right equilibrator cylinder assembly (9).

(21) Repeat step (18) above for the rear end of the left equilibrator cylinder assembly (8).

Caution: **Adequate support must be placed across the launcher base to prevent damage to the launcher in the event that the launcher erecting beam suddenly descends while the procedures described in steps (22) through (33) below are being performed.**

(22) Shore the launcher erecting beam (21) with adequate support across the launcher base in a position to engage the launcher struts in the event that the launcher erecting beam suddenly descends.

(23) Set the LAUNCHER switch on the launcher control-indicator to DOWN. When the launcher erecting beam has lowered to a position approximately 40° from horizontal, set the LAUNCHER switch to STOP.

(24) Close the EQUILIBRATOR SYSTEM BYPASS valve (fig. 21).

Warning: **The launcher erecting beam will descend when step (25) below is being performed. To prevent injury or death, personnel must stand clear of the erecting beam.**

(25) Air bleed the downlock cylinder assembly (fig. 25) as prescribed in (*a*) through (*e*) below.

(*a*) Remove the valve cap from the bleeder valve. Install the hose assembly on the bleeder valve. Place the free end of the hose assembly in a suitable container.

(*b*) Loosen the bleeder valve.

(*c*) Slightly open the EQUILIBRATOR SYSTEM BYPASS valve (fig. 21). After the initial surge of air and hydraulic oil is emitted, adjust the EQUILIBRATOR SYSTEM BYPASS valve to obtain a slow, steady flow of oil. When the oil runs clear, without an indication of air or foam, torque the bleeder valve to 75 pound-inches.

(*d*) Close the EQUILIBRATOR SYSTEM BYPASS valve (fig. 21).

(*e*) Remove the hose assembly and install the valve cap on the bleeder valve (fig. 25).

(26) Open the EQUILIBRATOR SYSTEM BYPASS valve (fig. 21).

(27) Repeat step (9) above for the forward end of the right actuating cylinder assembly (16, fig. 24) and the forward end of the left actuating cylinder assembly (15).

(28) Close the EQUILIBRATOR SYSTEM BYPASS valve (fig. 21).

(29) Set the LAUNCHER switch on the launcher control-indicator to UP. When the launcher erecting beam is up and locked, set the LAUNCHER switch to STOP.

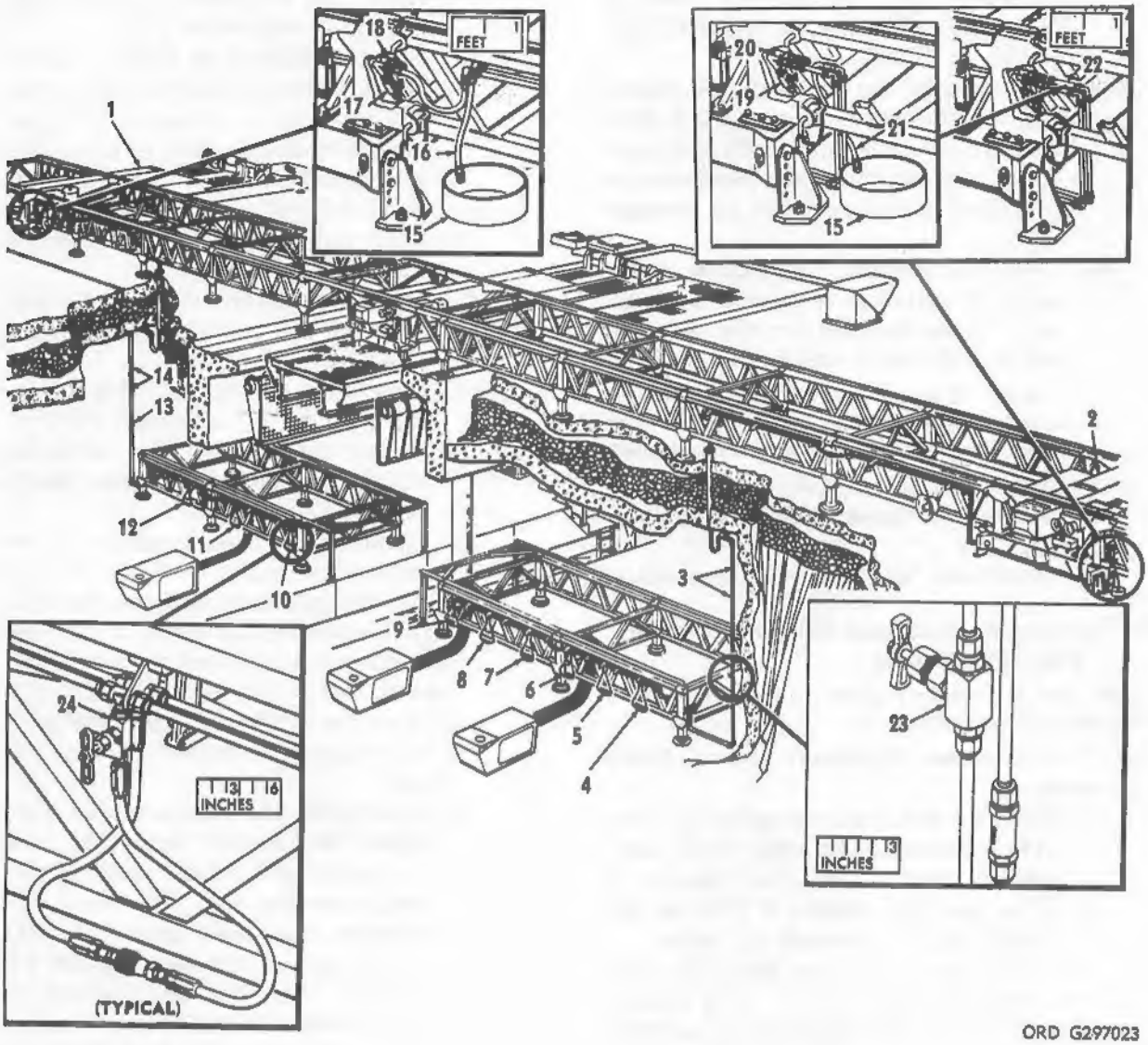
(30) Shore the launcher erecting beam with adequate support across the launcher base, directly under the launcher struts to allow the erecting beam to be lowered and secured, with the forward end of the erecting beam approximately 5 feet above the ground.

(31) Set the launcher switch to DOWN. When the erecting beam begins to descend, set the LAUNCHER switch to STOP. Lower the erecting beam onto the support described in (30) above by operating the EQUILIBRATOR SYSTEM BYPASS valve.

(32) Air bleed the rear end of the wedge lines as described in (*a*) through (*c*) below.

(*a*) Remove the valve cap from the bleeder valve (fig. 15) at the rear of the forward wedge assembly and install the hose assembly. Place the free end of the hose assembly in a suitable container.

(*b*) Slowly loosen the bleeder valve and allow the hydraulic oil to flow until it runs clear without an indication



1—Launcher 3
2—Launcher 2
3—Test station hydraulic line
4—Test station 4
5—Test station 5
6—Test station 6
7—Test station 7
8—Test station 8
9—Test station 9
10—Test station 3
11—Test station 2
12—Test station 1
13—Launcher 3 globe valve
14—Test station hydraulic line
15—Container
16—Hose assembly
17—Launcher 3 missile hydraulic shutoff valve
18—Return line
19—Launcher 2 missile hydraulic shutoff valve
20—Return line
21—Hose assembly
22—Tube assembly
23—Launcher 2 globe valve
24—Test station valve assembly (9)

Figure 27. Launcher missile hydraulic test station lines—flush.

of air or foam. Torque the bleeder valve to 75 pound-inches.

(c) Remove the hose assembly and install the valve cap on the bleeder valve.

(33) Set the LAUNCHER switch to UP. When the erecting beam is up and locked, set the LAUNCHER switch to STOP, and remove the shoring.

(34) Set the LAUNCHER switch to

DOWN. When the erecting beam is down and locked, set the LAUNCHER switch to STOP.

(35) Depressurize the hydraulic oil reservoir as prescribed in paragraph 21*d*. Remove the filler cap and fill and pressurize the hydraulic oil reservoir as described in paragraph 21 *ag* through *ai*.

(36) Cycle the erecting beam three times, allow 3 minutes to elapse between each cycle, and return the erecting beam to the down and locked position.

Note. If operation of the erecting beam is erratic during cycling, the entire air bleed procedure prescribed above must be repeated.

(37) Install the bottom cover (6, fig. 14).

(38) Release the safety device assemblies (fig. 20).

(39) Install the launcher rack assemblies.

23. Test Station Hydraulic Oil Flush and Air Bleed Procedures

Note. The key numbers shown in parentheses in *a* and *b* below refer to figure 27.

a. Test Stations Hydraulic Lines Flush Procedures.

(1) Flush the test stations hydraulic lines (14) connecting launcher 3 (1) and test station 1 (12), test station 2 (11), and test station 3 (10) as described in *(a)* through *(l)* below.

(a) Disconnect the hose assembly (16) from the return line (18) located at the left forward end of launcher 3.

(b) Remove the coupling half quick-disconnect fitting on the hose assembly (16) removed in step *(a)* above and place the end of the hose in the container (15).

(c) Fill and pressurize the hydraulic oil reservoir as prescribed in paragraph 21 *ae* through *ai*.

(d) Open the test station valve assembly (24) at test station 3 (10).

Note. Check that the test station valve assemblies at test station 1 (12) and test station 2 (11) are closed.

(e) Open the launcher 3 globe valve (13).

(f) Open the launcher 3 missile hydraulic shutoff valve (17).

(g) Set the MISSILE HYDR switch on the launcher control-indicator to ON and allow a minimum of 4 gallons of hydraulic fluid to drain into the container (15). Set the MISSILE HYDR switch to OFF.

(h) Close the launcher 3 missile hydraulic shutoff valve (17).

(i) Close the launcher 3 globe valve (13) at the test station hydraulic line (14).

(j) Close the test station valve assembly (24) at test station 3 (10).

(k) Install the coupling half quick-disconnect assembly to the hose assembly (16).

(l) Connect the hose assembly to the return line (18).

(2) Flush the test stations hydraulic lines (3) connecting launcher 2 (2) and test station 4 (4), test station 5 (5), test station 6 (6), test station 7 (7), test station 8 (8), and test station 9 (9) as described in *(a)* through *(l)* below.

(a) Disconnect the tube assembly (22) from the return line (20) and from the end of the test station hydraulic line (3).

(b) Connect the hose assembly (21) to the end of the test station hydraulic line (3) disconnected in *(a)* above. Place the open end of the hose assembly into the container (15).

(c) Fill and pressurize the hydraulic oil reservoir as prescribed in paragraph 21 *ae* through *ai*.

(d) Open the test station valve assembly (24) at test station 9 (9).

Note. Check that the test station valve assemblies at test stations 4, 5, 6, 7, and 8 (4, 5, 6, 7, and 8) are closed.

(e) Open launcher 2 globe valve (23) at the test station hydraulic line (3).

(f) Open the launcher 2 missile hydraulic shutoff valve (19).

(g) Set the MISSILE HYDR switch on

the launcher control-indicator to ON and allow a minimum of 4 gallons of hydraulic fluid to drain into the container (15). Set the MISSILE HYDR switch to OFF.

(h) Close the launcher 2 missile hydraulic shutoff valve (19).

(i) Close the launcher 2 globe valve (23).

(j) Close the test station valve assembly (24) at test station 9 (9).

(k) Disconnect the hose assembly (21) from the end of the test station hydraulic line (3).

(l) Connect the tube assembly (22) to the return line (20) and the end of the test station hydraulic line (3).

b. Test Stations Hydraulic Lines Air Bleed Procedures.

(1) At launcher 3 (1), fill and pressurize the hydraulic oil reservoir as prescribed in paragraph 21 *ae* through *ai*.

Note. If the HYDRAULIC RESERVOIR PRESSURE gage indicates below 15 psi or the sight gage on the hydraulic oil reservoir indicates below the half-way point during these procedures, the hydraulic oil reservoir must be serviced.

Caution: **If the oil level does not indicate on the sight gage at any time during these procedures, the hydraulic oil reservoir must be serviced, and the entire bleed procedure as described in steps (2) though (5) below must be repeated.**

(2) Check that the AIR RESERVOIR PRESSURE gage indicates between 600 and 2,000 psi.

(3) Air bleed the test station hydraulic line (14) connecting launcher 3 (1) and test station 1 (12), test station 2 (11), and test station 3 (10) as described in *(a)* through *(k)* below.

(a) Check that the test station valve assembly (24) at test stations 1 and 2 (12 and 11) is closed.

(b) Open the test station valve assembly at test station 3 (10).

(c) Open the launcher 3 globe valve (13) at the test station hydraulic line (14).

(d) Open the launcher 3 missile hydraulic shutoff valve (17).

(e) Set the TEST-FIRE switch on the launcher control-indicator to TEST. Set the LAUNCHER DC POWER switch to on. Set the MISSILE HYDR switch to ON.

(f) After allowing the hydraulic fluid to circulate for approximately one minute, open the test station valve assembly at test station 2 (11).

(g) After allowing the hydraulic fluid to circulate for approximately one more minute, open the test station valve assembly at test station 1 (12). Allow the hydraulic fluid to circulate for approximately one minute.

(h) Set the MISSILE HYDR switch on the launcher control-indicator to OFF.

(i) Close the test station valve assembly (24) at test station 1 (12), test station 2 (11), and test station 3 (10).

(j) Close the launcher 3 missile hydraulic shutoff valve (17).

(k) Close the launcher 3 globe valve (13).

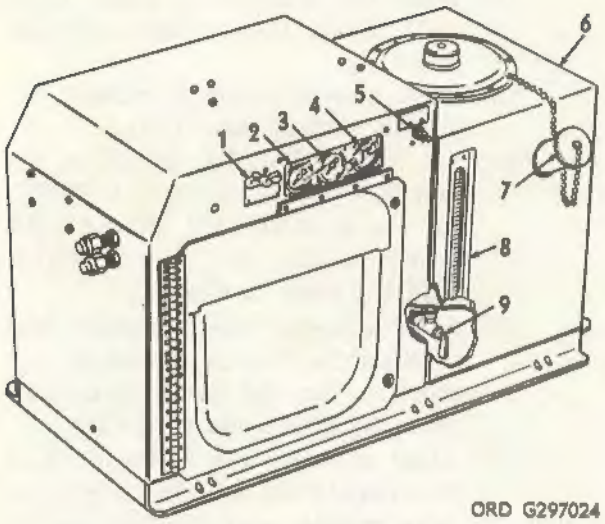
(4) Repeat steps (1) and (2) above for launcher 2 (2).

(5) Air bleed the test station hydraulic line (3) connecting launcher 2 (2) and test station 4 (4), test station 5 (5), test station 6 (6), test station 7 (7), test station 8 (8), and test station 9 (9) as described in *(a)* through *(k)* below.

(a) Check that the test station valve assembly (24) at test stations 4, 5, 6, 7, and 8 (4, 5, 6, 7, and 8) is closed.

(b) Open the test station valve assembly (24) at test station 9 (9).

(c) Open the launcher 2 globe valve (23) at the test station hydraulic line (3).



1—SYSTEM BLEED valve
2—PUMP HYD PRESS gage
3—MISSILE HYD TEST PRESS gage
4—ACCUM AIR PRESS gage
5—ACCUM AIR FILLER valve
6—Reservoir
7—Reservoir cap
8—Fluid level indicator
9—Drain cock

Figure 28. Test station hydraulic pumping unit.

(d) Open the launcher 2 missile hydraulic shutoff valve (19).

(e) Set the MISSILE HYDR switch on the launcher control-indicator to ON and allow the hydraulic fluid to circulate for approximately one minute.

(f) Open the test station valve assembly (24) at test station 8 (8) and allow the hydraulic fluid to circulate for approximately one minute.

(g) Repeat *(f)* above, in the order given, for the test station valve assembly at test stations 7, 6, 5, and 4 (7, 6, 5, and 4).

(h) Set the MISSILE HYDR switch on the launcher control-indicator to OFF. Set the TEST-FIRE switch to FIRE. Set the LAUNCHER DC POWER switch to OFF.

(i) Close the test station valve assembly (24) at test stations 4, 5, 6, 7, 8, and 9 (4, 5, 6, 7, 8, and 9).

(j) Close the launcher 2 globe valve (23) at the test station hydraulic line (3).

(k) Close the launcher 2 missile hydraulic shutoff valve (19).

24. Test Station Hydraulic Pumping Unit Accumulator Air Pressure Check

a. Set the MOTOR POWER circuit breaker to OFF.

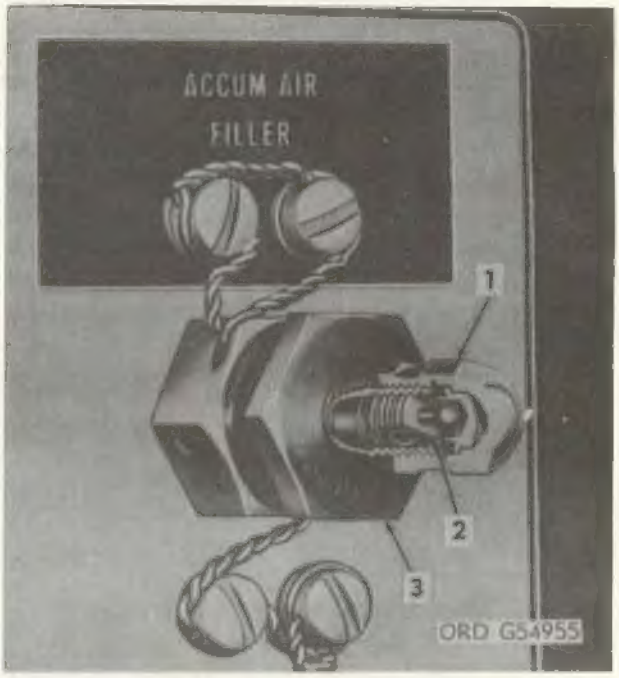
b. Open the SYSTEM BLEED valve (1, fig. 28) and check that the ACCUM AIR PRESS gage (4) indicates 1,800 to 2,200 psi.

c. If the ACCUM AIR PRESS gage indicates below 1,800 psi, charge the accumulator as prescribed below.

(1) Close the SYSTEM BLEED valve (1).

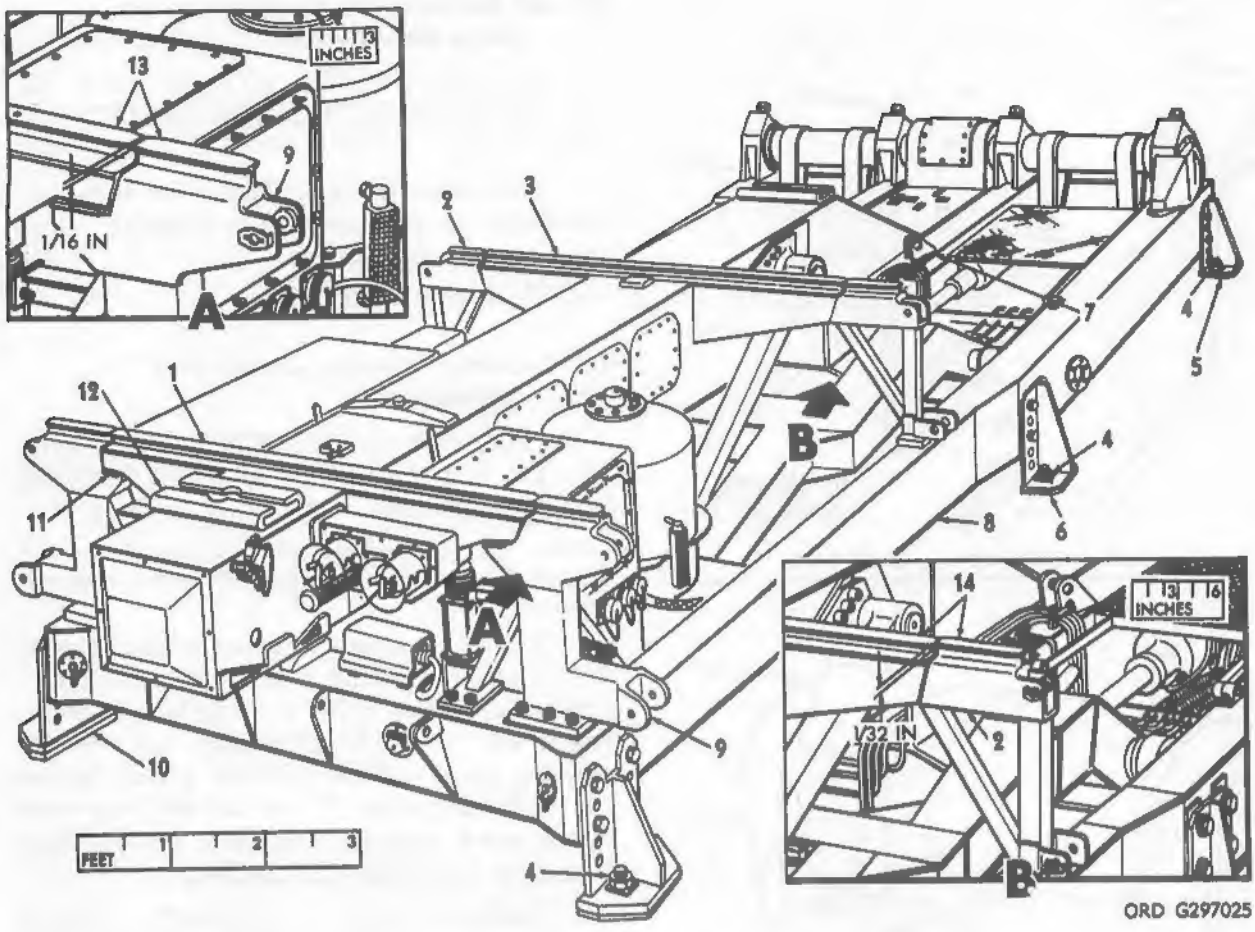
Warning: **To prevent injury or death, insure that the pressure in the air supply hose has been relieved or is held in check by a check valve before making or breaking hose connections.**

(2) Remove the cap (fig. 29) and connect the high pressure hose from the capping compressor.



1—Cap
2—Core
3—Swivel nut

Figure 29. ACCUM AIR FILLER valve.



1—Forward outrigger
2—Rear attach truss (2)
3—Rear outrigger
4—1-in. hex. nut (12)
5—Rear mounting bracket (2)
6—Intermediate mounting bracket (2)
7—Intermediate lift point (4)
8—Launcher base
9—Forward attach truss (2)
10—Forward mounting bracket (2)
11—1/16-in. shim
12—Launcher erecting beam
13—Track section
14—Track section

Figure 30. Launcher-leveling adjustment.

Warning: **To prevent injury or death, weight the air supply hose with sand bags.**

Note. Refer to TM 5-4310-210-10 or TM 5-4310-217-10 for instructions on operation of the capping compressor.

(3) Turn the swivel nut (fig. 29) counterclockwise and fill the hydraulic accumulator until the ACCUM AIR PRESS gage (4, fig. 28) indicates 1,850 to 2,050 psi.

(4) Turn the swivel nut (fig. 29) clockwise until completely closed.

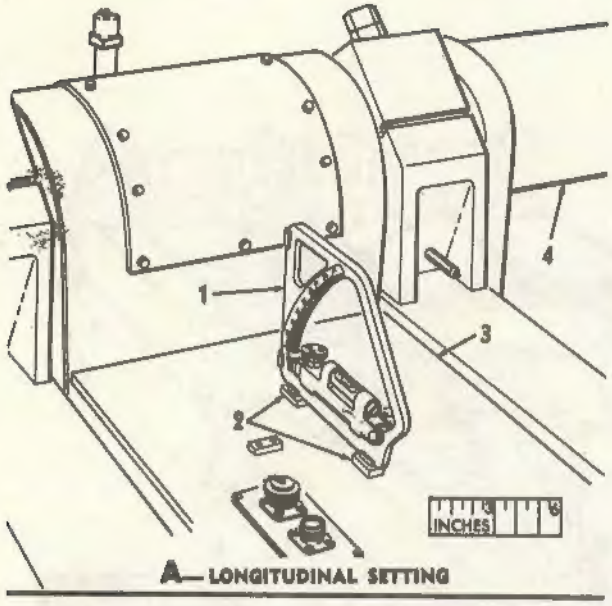
(5) Relieve the pressure in the air supply hose.

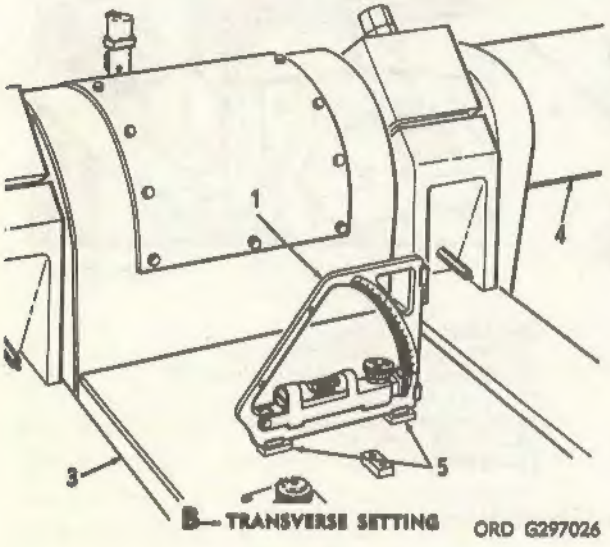
Warning: **Insure that all pressure is bled from the air supply hose before performing step (6) below.**

(6) Remove the high-pressure hose from the valve and install the cap.

Warning: **To prevent injury, exercise caution in relieving pressure from the hydraulic accumulator.**

(7) To relieve excessive air pressure in the hydraulic accumulator, remove





1—Gunner's quadrant
2—Leveling block
3—Launcher erecting beam
4—Trunnion
5—Leveling block

Figure 31. Gunner's quadrant—mounted.

the cap (fig. 29) and turn the swivel nut one-quarter turn counterclockwise.

(8) Depress the core until the correct air pressure is indicated.

(9) Turn the swivel nut clockwise until completely closed and install the cap.

25. Air Servicing the Equilibrator and Surge Accumulator

a. Open the SYSTEM BYPASS valve (fig. 21) and the EQUILIBRATOR SYSTEM BYPASS valve.

b. Pressurize the equilibrator or surge accumulator to the prescribed pressure, using clean, dry air or nitrogen.

c. Close both valves.

26. Launcher Leveling Checks and Adjustments

a. Check that the SYSTEM BYPASS valve (fig. 21) and the EQUILIBRATOR SYSTEM BYPASS valve are in the closed position.

Note. The key numbers shown in parentheses in *b* through *l* below refer to figure 30 unless otherwise indicated.

b. At the launcher control-indicator, elevate the launcher erecting beam (12) enough to allow a 1/16-inch shim (11) to be placed between the forward outriggers (1) on the erecting beam and the forward attach trusses (9) on the launcher. Lower the erecting beam to the down position, and open the EQUILIBRATOR SYSTEM BYPASS valve.

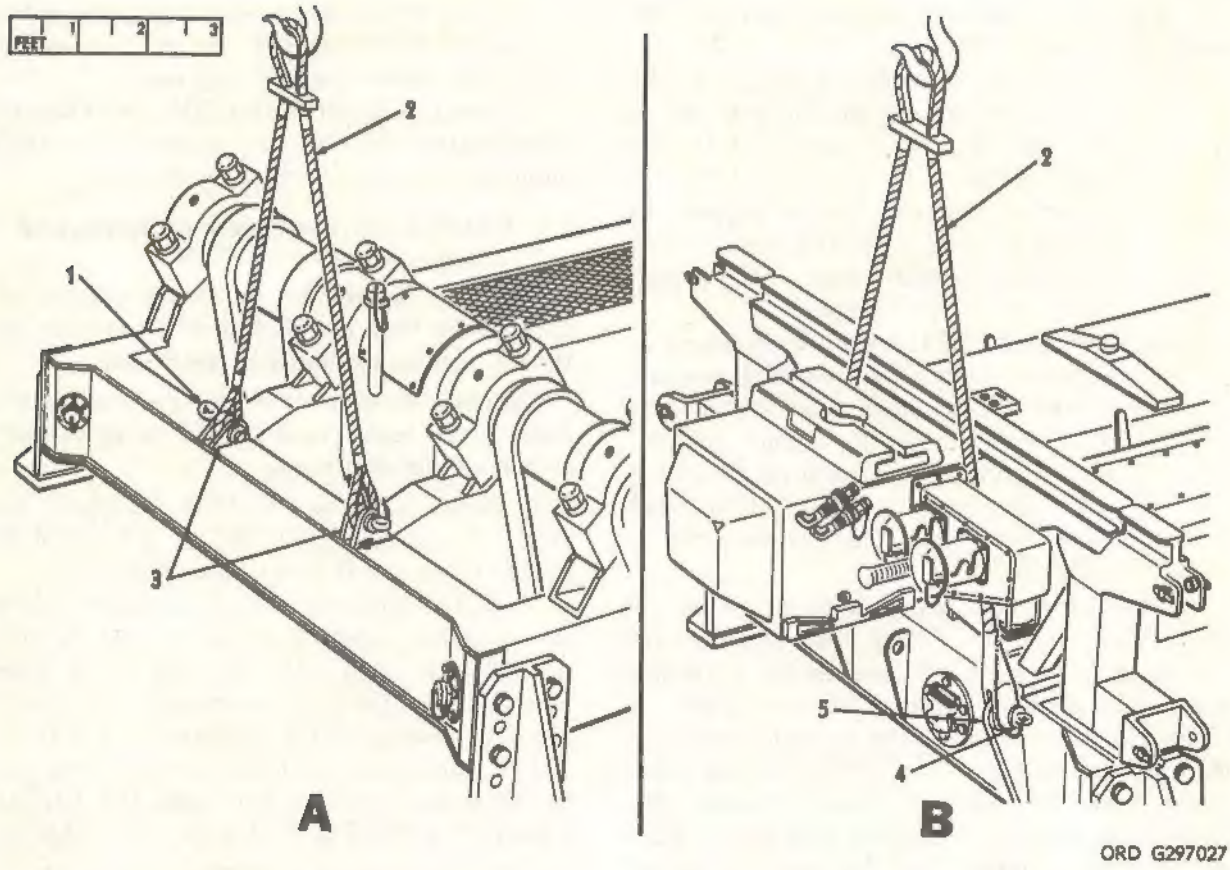
c. Check the level of the launcher erecting beam by placing the gunner's quadrant (fig. 31) across the leveling blocks parallel to the trunnion. Observe that the gunner's quadrant indicates that the erecting beam is level to within ±5 mils. If the erecting beam is not level to within ±5 mils, perform the operations as prescribed below.

(1) Loosen the two nuts (4) on each of the mounting brackets (5, 6, and 10) enough to permit shimming.

(2) Attach the multiple-leg sling (fig. 32) to the rear lifting lugs and secure with the attached toggle pins.

***Caution:* To reduce the possibility of damaging the launcher, do not raise it any higher than is necessary to place the shims under the brackets.**

(3) Using a hoisting device capable of lifting 6,250 pounds, lift the rear of the launcher enough to permit shims of proper thickness to be inserted.



1—Toggle pin (2)
2—Multiple-leg sling
3—Rear lifting lug
4—Toggle pin (2)
5—Front lifting lug (2)

Figure 32. Launcher lifting points.

(4) Add shims of the proper thickness, as required, (table 1) under the rear mounting brackets (5).

Table 1. Leveling Shims

Intermediate and rear shims	
Thickness	Quantity issued
0.1345 inch	16
0.25 inch	8
0.50 inch	8

Forward shims	
Thickness	Quantity issued
0.1345 inch	16
0.25 inch	8
0.50 inch	8

(5) Lower the launcher and check the level with the gunner's quadrant. Observe that the gunner's quadrant indicates that the launcher erecting beam is level within ±5 mils. If the launcher erecting beam is not level within ±5 mils, repeat steps (3) and (4) above until the proper level is obtained.

(6) Remove the multiple-leg sling from the rear lifting lugs.

d. Check the level of the launcher erecting beam by placing the gunner's quadrant (fig. 31) on the leveling blocks perpendicular to the trunnion. Observe that the gunner's quadrant indicates that the erecting beam is level to within ±5 mils. If the launcher erecting beam is not level to within ±5 mils, determine from